

INTERMOUNTAIN FOREST AND RANGE EXPERIMENT STATION
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U. S. Department of Agriculture
Forest Service

MOUNTAIN PINE BEETLE CONDITIONS
TETON NATIONAL FOREST
WYOMING

Detection and Appraisal Survey
Fall of 1957

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The majority of the timber on the Teton National Forest is lodgepole pine, a high percentage of which is of a large enough diameter to be suitable host material for mountain pine beetle. The mountain pine beetle remained at a low level from the completion of the Targhee-Teton project in 1950 until 1955. In September of 1955 a hot spot showing epidemic tendencies was detected in the Dell Creek drainage which runs into the Hoback River. In 1956 a total of 3,483 lodgepole pine trees were treated in the Dell Creek area resulting in a 90 percent reduction in infested trees. The fall survey in 1956 revealed new centers of infestation in west Shoal Creek and Sand Rock Creek and in the Hoback drainage and in Ditch Creek just north of the Gros Ventre river. All centers of infestation were chemically treated in 1957.

The aerial survey of the Teton National Forest conducted in the fall of 1957 revealed two new centers of infestation along the west facing slope of the mountains just east of the Snake River between Ditch Creek and Spread Creek. All centers of infestation were appraised by ground crews. Units chemically treated in 1957 were surveyed by a forest crew using a systematic line-plot survey. Estimates for the new centers of infestation were obtained by Station personnel.

Dell Creek - 210 acres - 160 infested trees.

Surveys in this area in 1955 showed an estimated 2,700+635 infested trees on 1,780 acres. Records of trees treated in the 1956 control program corresponded with the estimate. The 1956 survey estimates indicated 100 infested trees - actually 268 trees were treated in 1957. In the fall of 1957 it was estimated that there were 230 infested trees. Approximately 170 of the infested trees are in lodgepole pine type on approximately 210 acres located west of Parady Creek and east of the west fork of Parady Creek. Another concentration of about 30 infested trees is present in the lower end of the timber between Rock Creek and Parady Creek. The rest of the infested trees (about 30) appear to be on the west rim of Riling draw. (See attached map). This rapid buildup occurring after the reduction of over 90 percent during 1956 may be indicative of the potential that exists in the bark beetle population of this area.

Sand Rock Creek - 60 acres - 60 trees.

Five patches of lodgepole pine trees in the Sand Rock Creek area were surveyed by the forest crew. The mountain pine beetle was found to be active in only one of these patches. This area of about 60 acres contains approximately 60 infested trees. A total of 557 infested trees were treated in this unit last season.

West Shoal Creek.

A ten percent survey of the west Shoal Creek unit did not locate any infested trees. Unquestionably control efforts in this area have reduced the beetle population materially. It is almost certain, however, that there are a few infested trees in the area, even though none fell within the survey plots. The total infested trees is probably too small to warrant control action but in view of the rapid increase that has occurred, on the Dell Creek unit directly to the east, this area warrants close observation for the next year or two.

Antelope Mountain - 1200 acres - 450 infested trees.

The fall aerial surveys detected the buildup of mountain pine beetle on the west slope of Antelope Mountain, east of Antelope flat. This infestation is just over the ridge from the main hot spot in Ditch Creek. A ground survey made by the Station entomologists produced estimates of 450 infested trees on about 1200 acres. Most of the currently infested trees are grouped. Groups range in size from 3 to 4 trees to as many as 50 trees.

Lost Creek - 100 acres - 50 infested trees.

There is a hot spot of mountain pine beetle activity just north of Lost Creek and about $1\frac{1}{2}$ miles north of the Antelope Mountain infestation. In this area there are about 50 infested trees on about 100 acres.

Ditch Creek - 180 acres - 80 infested trees.

The Ditch Creek infestation actually consists of two hot spots located in the Ditch Creek drainage. The larger spot is situated in a small basin on the west side of Ditch Creek just over the mountain from the Antelope Mountain infestation. The smaller center is located in the south portion of Ditch Creek near a reservoir. During the 1957 season 401 trees were treated in the Ditch Creek hot spots. The present estimate for Ditch Creek is 80 infested trees on about 180 acres, 60 of which are on the west side on about 150 acres, the remaining appear as hot spots on the east side.

DISCUSSION AND RECOMMENDATIONS

Results of the surveys indicate serious increases in mountain pine beetle populations in the lodgepole pine stands of the Teton National Forest. There is a definite increase in the number of new centers of infestation that have developed since last year. A rather rapid increase in the number of infested trees within areas that have been successfully treated indicates that the few infested trees that were not treated produced large beetle populations. When the potential of beetle populations is at a high level and it is physically impossible to locate and treat all infested trees the first year of a project, it usually is necessary to treat more than one year.

It is recommended that all mountain pine beetle infestations located by the 1957 survey should be treated in 1958 to prevent expansion of centers. This conclusion results from an interpretation of entomological evidence indicating a large-scale epidemic of mountain pine beetle is possible if the treatment of small centers of infestation is not continued until populations return to more endemic levels.

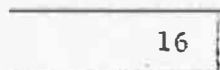
The treating methods and procedures used in 1956 and 1957 should be used again in 1958. Based on two years experience, the treating costs should not exceed 10 dollars per tree.

Technical entomological assistance from the Division of Forest Insect Research will be available, if needed, to assist in planning the project, help train the project personnel, and to review the control operation.

Table 1.--Survey estimates - mountain pine beetle survey
Teton National Forest

Unit	Infested area (acres)	Infested trees	Infested trees per acre
Dell Creek			
West Parady	210	170	.81
Lower Rock-Parady	80	30	.36
Riling Draw	30	30	1.00
Sand Rock Unit	60	60	1.00
Antelope Mountain	1,200	450	.37
Lost Creek	100	50	.50
Ditch Creek			
Ditch Creek (West)	150	60	.40
Ditch Creek (East)	<u>30</u>	<u>20</u>	<u>.67</u>
Totals	1,860	870	

L E G E N D



Survey strip and strip number



Location and number of infested trees found on the line plots (multiply by 10 to obtain estimate)

B

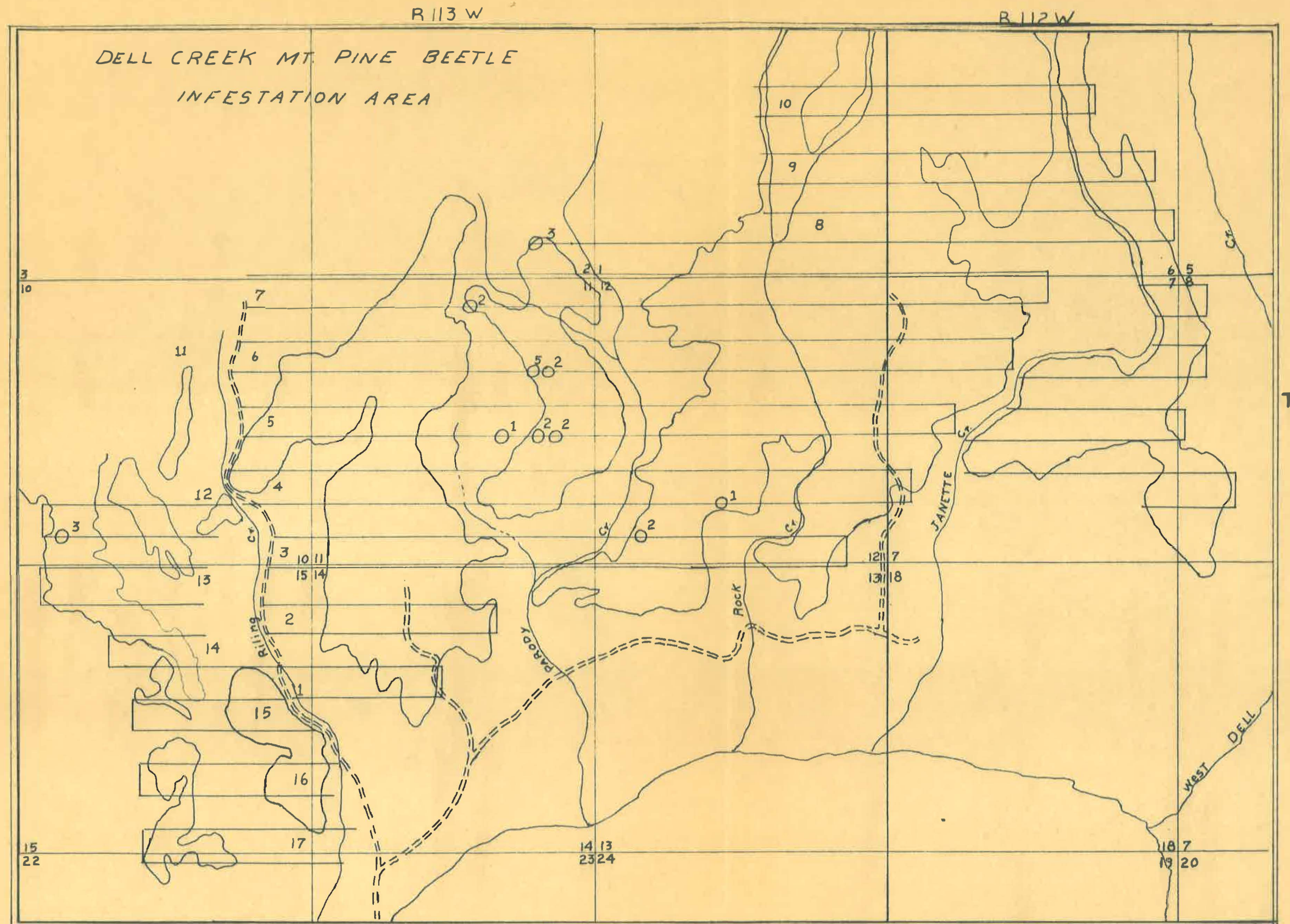
Lost Creek Unit

C

Antelope Mountain Unit

D

Ditch Creek Unit



R 112 W

SANDROCK CREEK MT. PINE BEETLE
INFESTATION AREA

